# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/082,450 | 02/23/2002 | Jian Zhu | Li 25 | 8324 |

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|---|---|
| 570          7590          03/20/2007<br>AKIN GUMP STRAUSS HAUER & FELD L.L.P.<br>ONE COMMERCE SQUARE<br>2005 MARKET STREET, SUITE 2200<br>PHILADELPHIA, PA 19103 | EXAMINER<br><br>MERED, HABTE |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2616 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 03/20/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<table>
<tr><td rowspan="2"><strong>Office Action Summary</strong></td><td>Application No.</td><td>Applicant(s)</td></tr>
<tr><td>10/082,450</td><td>ZHU ET AL.</td></tr>
<tr><td></td><td>Examiner</td><td>Art Unit</td></tr>
<tr><td></td><td>Habte Mered</td><td>2616</td></tr>
</table>

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>03 January 2007</u>.

2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>2,3 and 5-10</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2,3 and 5-10</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 February 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

1.      The amendment filed on 1/3/2007 has been entered and fully considered.

2.      Claims 2, 3,and 5-10 are pending in the instant Application. Claims 1 and 4 have been cancelled. Claims 2, 3, 5, and 6 are the base independent claims.

### *Claim Rejections - 35 USC § 102*

1.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.      **Claims 2, 3, and 5-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al (Yuan Yang and Jianchao Wang, "A New Self-Routing Multicast Network", IEEE, December 1999), hereinafter referred to as Yang.

*Yang teaches a self-routing mechanism in a multi-stage switch based on the content of the packets fed to the switching elements where the content of the packet determines the states of the switching elements.*

3.      Regarding **claims 2 and 5**, Yang discloses, a method and system for routing packets through a switching network, wherein the switching network includes multiple stages of switching elements **(See Figures 1, 2, 4, and 5)**, each one of the switching elements receiving packets as local input packets on its input ports and producing packets as local output packets on its output ports each of the packets having a plurality of in-band control signals where each one of the in-band control signals is utilized in a corresponding one of the switching elements as the local in-band control signal for the

corresponding switching element to make switching decisions **(See page 1309, section 7.1),,** the method comprising: coding each one of the in-band control signals of the packets into a plurality of bits based on a predetermined coding algorithm, and generating, with reference to the coding scheme **(See Table 1)**, the output bits of the local output packets at each one of the switching elements based on a subset of the bits in the corresponding one of the in-band control signals for each one of the switching elements to route the local input packets arriving at the corresponding switching element, **(See page 1310, Column 1, Lines 3-20)** wherein each one of the switching elements is a _bicast cell_ **(In Yang's system each switching element is capable of multicasting and therefore is a bicast cell and the definition is shown on page 1300, 2nd Column and the corresponding figures are 3A-3F. Yang's definition and description of the state of the switching connection for bicast cell is exactly like the Applicant's description of bicast cell defined on page 169 of the specification and exactly matches Applicant's Figures 2C-2F)** and the local input packets to each one of the switching elements includes idle **(Page 1300 case IV, Page 1306 Lines 13-20, Page 1310 Lines 25-27, Table 1)**, 0-bound **(Table 1)**, 1-bound **(Table 1)** and bicast packet types **(Page 1310, Lines 20-25)**.

4.      Regarding **claims 3 and 6**, Yang discloses, a method and system for routing packets through a switching network, wherein the switching network includes multiple stages of switching elements **(See Figures 1, 2, 4, and 5)**, each one of the switching elements receiving packets as local input packets on its input ports and producing packets as local output packets on its output ports each of the packets having a plurality

of in-band control signals where each one of the in-band control signals is utilized in a

corresponding one of the switching elements as the local in-band control signal for the

corresponding switching element to make switching decisions **(See page 1309, section**

**7.1)**,, the method comprising: coding each one of the in-band control signals of the

packets into a plurality of bits based on a predetermined coding algorithm, and

generating, with reference to the coding scheme **(See Table 1)**, the output bits of the

local output packets at each one of the switching elements based on a subset of the bits

in the corresponding one of the in-band control signals for each one of the switching

elements to route the local input packets arriving at the corresponding switching

element, **(See page 1310, Column 1, Lines 3-20)** wherein each one of the switching

elements is a *routing cell* **(In Yang's system each switching element is capable of**

**sorting under a linear order of 0-bound, idle, and 1-bound.  This is effectively**

**illustrated on Page 1306, in the second column in the first paragraph.  Given this**

**and the fact that the Applicant defines routing cell on page 161 of the**

**specification simply as a sorting cell associated with a set consisting of 0-bound,**

**idle, 1-bound and linearly ordered one can easily conclude Yang's cells are also**

**routing cells. )** and the local input packets to each one of the switching elements

includes idle **(Page 1300 case 4, Page 1306 Lines 13-20, Page 1310 Lines 25-27,**

**Table 1)**, 0-bound **(Table 1)**, 1-bound **(Table 1)** and bicast packet types **(Page 1310,**

**Lines 20-25)**.

5.      Regarding **claims 7 and 9**, Yang discloses a method, wherein each one of the

packet types corresponds to a distinct in-band control signal **(Cases 1-4 on page 1300**

**and in general 2<sup>nd</sup> column on page 1300)**, the coding includes coding each of the in-band control signals by at least two bits **(See Section 5.1, 1<sup>st</sup> paragraph)**, and the coding algorithm includes coding the bits such that the first bit of the code for the in-band control signal corresponding to a 0-bound packet type **(See Case 1 on page 1300)** is different from the first bit of the code for the in-band control signal corresponding to a 1-bound packet type **(See Case 2 on page 1300)**.

6.      Regarding **claims 8 and 10**, Yang discloses a method, wherein the encoder **(Since Table 1 on page 1306 indicates encoding occurs then it is inherent for Yang's system to have an encoder)** includes means for coding each of the in-band control signals by at least two bits **(See Section 5.1, 1<sup>st</sup> paragraph)** and the coding algorithm includes coding the bits such that the first bit of the code for the in-band control signal corresponding to a 0-bound packet type **(See Case 1 on page 1300)** is different from the first bit of the code for the in-band control signal corresponding to a 1-bound packet type **(See Case 2 on page 1300)**.

### Response to Arguments

Applicant's arguments with respect to claims 2, 3, 5, and 6 have been considered but are moot in view of the new ground(s) of rejection.
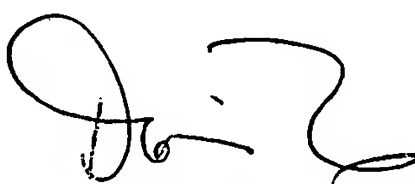
### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Doris H. To can be reached on 571 272 7629. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HM
3-15-2007

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